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D201/D303

9.3274

AUTHOR: Fuzik, N.S.

TITLE: The (wide-) band properties of de-phasing modulation

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 5, 1961, 2, abstract 5 K9 (Nauchno-tekhn. inform. byul. Leningr. politekhn. in-t, 1960, no. 3, 13-16)

TEXT: The problems of applying de-phasing modulation in (wide-) band transmitters are discussed. The dependence is analyzed of power and el-acoustic performance indices of the wide band transmitter on U_g, R_{oe} and Ψ_o, where Ψ_o - half of the phase shift between the vectors of the waves at the output of RF-channels, at which compensation of mutual detuning occurs. The optimum design of the transmitter operation is discussed together with real modulation characteristics with changes in U_g by ± 20%, in R_{oe} by ± 10%, in Ψ_o by 5%. Experimental data are given from the study of a laboratory model using GY-50 (GU-50) tubes. This data shows that the non-linear

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The (wide-) band properties...

distortions of the envelope slightly increase with the change in U_g by ± 20%. The changes in R_{oe} and Ψ_o within the above mentioned limits affect power and performance indices only slightly. The results of the analysis confirm the possibility of wide-band dephasing modulation. The tubes in the final stages should work with oscillating surges at all frequencies within the band. 3 references.
[Abstracter's note: Complete translation]

Card 2/2

FUZIK, N. S.,

"Investigation of Modulation by Means of Dephasing." Dissertation for the Degree of Candidate of Sciences, Leningrad Electrotechnic Inst. of Communication im. M. A. Bonch-Bruyevich. Defense held on 23 November 1961.

In the dissertation are analyzed the main features of amplitude modulation of vacuum tube ascillators by the methods of G. Shireks (modulation by dephasing). On the basis of the calculation method proposed by the candidate for the degree, wherein a vacuum tube oscillator is operated in the detuned (in general) and either under-volage or weakly over-voltage modes, a procedure is developed for the engineering calculation of the static modulation characteristic.

Izv Vysshikh ucheb. zaved. MViSSO SSSR po razdelu Radiotekhnika, vol. 6, No. 1, 1963. p. 98-102 (original checked--Cand. of Sciences as in original.)

FUZINH, YE. K.

KRASINSKIY, N.P.; VALUTINA, V.A.; PRYAKHINA-KON'KOVA, Ya.A.; FUZINA, Ye.K

Effect of light intensity on the oxidation-reduction balance of plants in connection with photosynthesis. Fiziol.rast. 2 no.1:62-69 Ja-F '55. (MLRA 8:9)

1. Gosudarstvennyy universitet imeni N.G.Chernyshevskogo, Saratov.
(Plants, Effect of light on) (Oxidation--Reduction reaction)

FUZINE CSERENYEY, Edit, dr.; KENDE, Eva, dr.

Whooping cough in an adult. Orv. hetil. 102 no.40:1887-1889 1 O '61.

1. Budapesti Orvostudomanyi Egyetem, Kozegeszsegtani Intezet.

(WHOOPING COUGH case reports)

FUZY, Jeno

Strain of shells of hyperbolic paraboloid form. Melyepit tud
sz 12 no.2:90-92 F '62.

FUZY, Jeno, okleveles epitesmernok, iranyito tervezo

Stress condition of an elastic infinite semispace loaded on its adjacent plane. Melyepitestud szemle 13 no.10:467-469 O '63.

1. Ipari es Mezogazdasagi Tervezo Vallalat.

FUZY, Jeno, okleveles epiteszmernok, vasbetonepito szakmernok

Approximate calculation of the potential theory problems in the theoretical mechanics in case of the square range. Melyepitestud szemle 14 no.4:188-192 Ap '64.

1. Budapest City Construction Designing Interprise, Budapest.

FUZY, O. (Budapest,XI., Stoczek u.2)

Design of mixed flow impeller. Periodica polytechn. eng 6 no.4:299-317 '62.

1. Department of Hydraulic Machines, Technical University, Budapest. Presented by Prof.Dr.J.Varga.

FUZI, Oliver (Budapest, XI., Stoczek u.2)

Consideration of flow conditions at rotor inlet in blading design. Periodica polytechn eng 8 no.1:57-65 '64.

1. Department of Hydraulic Machines of Budapest Technical University. Submitted August 2, 1963.

GAYDAMAKA, M.G., FYADINA, D.D.

Utilization of a surviving tissue culture for the transportation ov virus-containing material. Vop.virus. 3 no.5:310-311 S-O '58 (MIRA 11:10)

1. Khar'kovskiy institut vaktsin i syvorotok.
(VIRUSES, culture,
surviving tissue culture for transport of virus-containing material (Rus))

FYADINA, D. D.

Disease of the Upper Respiratory Tract in Horses Following the Human Influenza Epidemic of 1957

by M. G. [illegible], G. P. [illegible], A. S. [illegible], B. D. [illegible] and D. D. [illegible], Mechnikov Institute of Sera and Vaccines, Kharkov, USSR

In Kharkov in October 1957 there was a high rate of infection with Asian influenza among the human population. The morbidity rate varied according to conditions of contact but reached 80% in some groups. Against this background an outbreak of disease of the upper respiratory tract occurred among the horses at the Kharkov race-course following the influenza epidemic among the race-course staff.

Until recently, horses were not considered to be susceptible to the influenza virus. The existing forms of disease known as "equine influenza" differ somewhat in their clinical picture from the illnesses observed on this occasion although that picture is compatible with the disease described in Czechoslovakia and shown to be due to A-equi Praha 56.[a] The basic symptom was an infection of the upper respiratory tract diagnosed as an infectious catarrh. The disease was marked, however, by an unusually severe course in certain cases and was characterized by loss of appetite, general debility and an increase in temperature to 40.5°C. The pyrexia lasted from three to five days, but in individual cases for as long as fifteen days. In four horses out of fifteen a second pyrexial phase occurred.

The disease in its marked form began on 1 November and lasted until 5 November. As early as 20 October, however, a few signs including bronchitis and tracheitis, with loss of appetite but normal temperature, had been observed among the horses. Illness among the race-course staff began on 15 October 1957 and ended on 1 November; thus the clinically marked forms of the disease among the horses began immediately after influenza among the staff had ended.

Whereas infections among horses occurred in all the departments, the clinically marked forms were concentrated in Department II, where 18 out of 25 horses were affected. There were one to three cases in each of the remaining ten departments. Attempts to trace the reasons for this concentration of the disease in Department II met with no success.

Attempts to find out the cause of the disease by isolating the virus in chick-embryos (amniotic inoculation) brought no results. In view of the fact that the disease in horses was connected epidemiologically with influenza among people, an attempt was made to establish the presence of antibodies to viruses A2 and A by means of the haemagglutination-inhibition test and the neutralization test in chick-embryos. The haemagglutination-inhibition test was set up with four doses of 0.25 ml of antigens with viruses A 3 52 and A Asia 57 (Singapore and Berezki strains, of which the first is avid and the second non-avid). Two modifications of the test were carried out. In the first, after the virus had been mixed with the serum, 0.5 ml of

Bulletin of the World Health Organization, Vo. 20, No.2-3, 1959 (Study devoted to influenza)

MIKULINSKAYA, R.M.; FYADINA, D.D.; DROMASHKO, A.I.; SHULICHENKO, A.I.; ROMASHKO, Yu.V.; ZLATOPOL'SKAYA, R.D.; BERGOL'TSEVA, L.A.; VEREZUB, L.G.; CHAYKINA, T.N.; YEMEL'YANOVA, O.I.; GINZBURG, L.Ya.; GOLODYUK, L.F.; RUMYANTSEVA, I.V.; VYCHEGZHANIN, A.G.; GOL'DENBERG, R.A.

Data on the study of the epidemiological effectiveness of vaccination against influenza in Kharkov in Octover 1957. Vop.virus. 4 no.4:407-411 Jl-Ag '59. (MIRA 12:12)

1. Khar'kovskiy institut vaktsin i syvorotok imeni I.I. Mechnikova.
(INFLUENZA, prevention & control)

GAYDAMAKA, M.G.; DROMASHKO, A.S.; KYADINA, D.D.

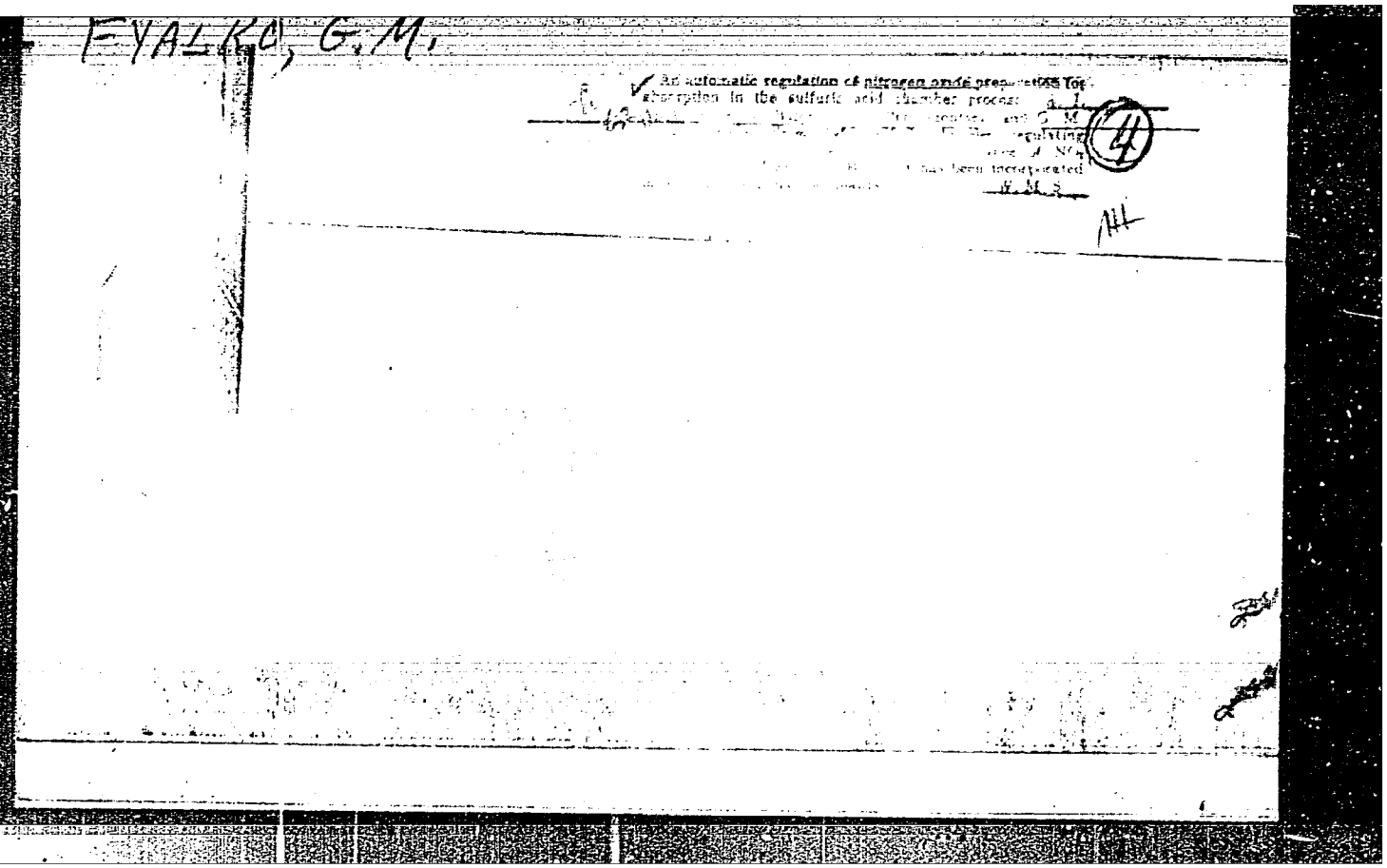
Glycerin influenzal diagnosticum. Vop.virus. 4 no.6:669-674 N-D '59. (MIRA 13:3)

1. Khar'kovskiy institut vaktsin i syvorotok.
(INFLUENZA diag.)
(GLYCERIN pharmacol.)

GAYDAMAKA, M.G.; VOLCHANETSKAYA, G.I.; FYADINA, D.D.

Adsorption of erythrocytes by cells of human tissue culture infected with influenza virus. Vop.virus. 6 no.5:564-567 S-O '60.
(MIRA 14:7)

1. Khar'kovskiy institut vaktsin i syvorotok imeni I.I.Mechnikova.
(INFLUENZA) (ERYTHROCYTES)



FYATETSKIY, B.; FYALKO, N.

Diesel Motor

New lubricator for engine 1D 26/30. MTS, 12, No. 8, 1952

9. Monthly List of Russian Accessions, Library of Congress, November 1952, Uncl.

FYALKOV, A.

USSR (600)

Milk - Composition

Destribution of fat in milk as influenced by the size of fat globules. Mol. prom. 13 No. 7, 1952

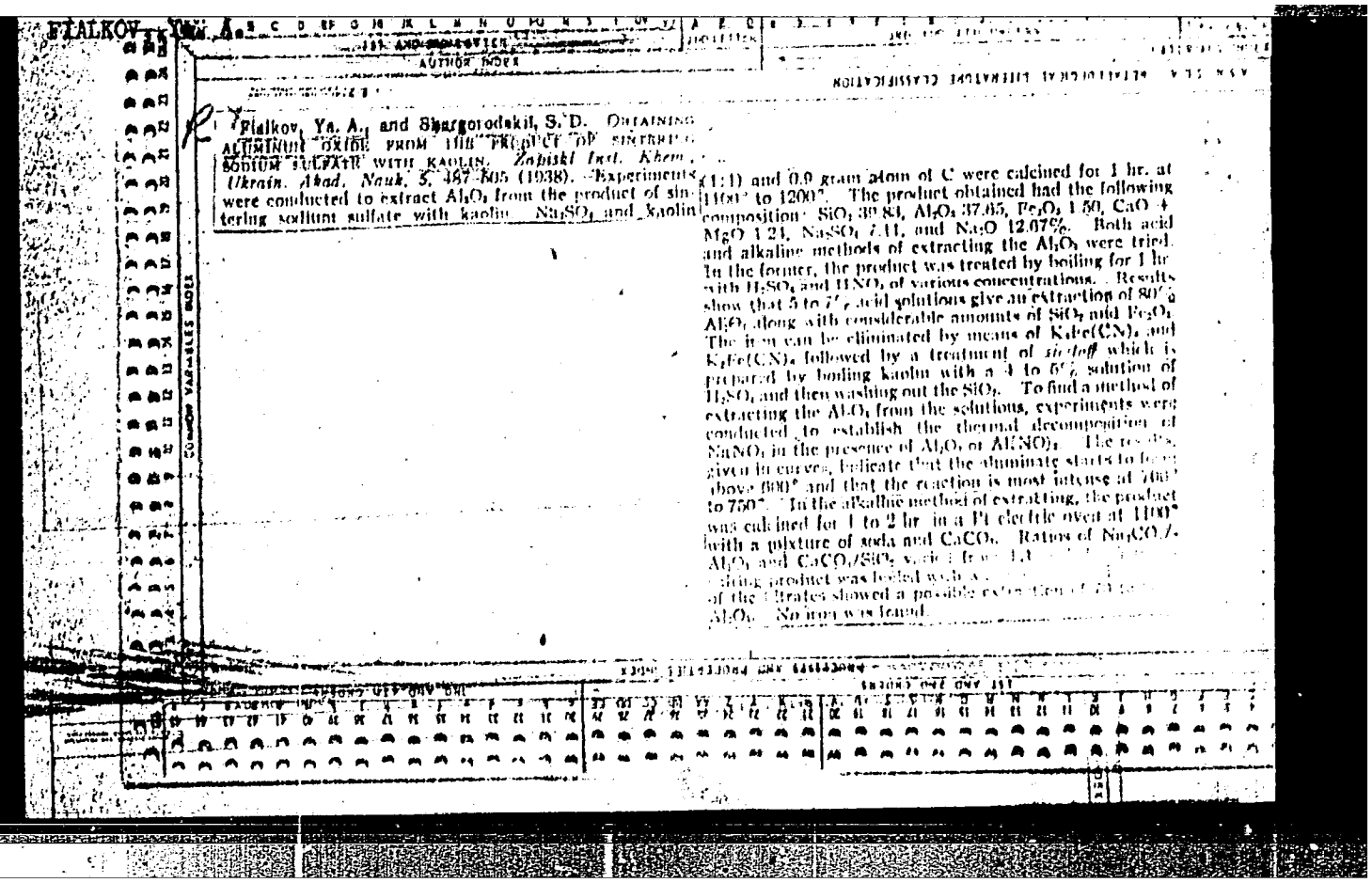
9. Monthly List of Russian Accessions, Library of Congress, October 1957, Uncl.

2

ANISIMOV, A.A.; FUZINA, Ye.K.; DOBRYAKOVA, L.A.; LIKHOVIDOVA, Ye.V.

Diurnal periodicity of the translocation of assimilates. Dokl. AN SSSR 146 no.6:1441-1444 O '62. (MIRA 15:10)

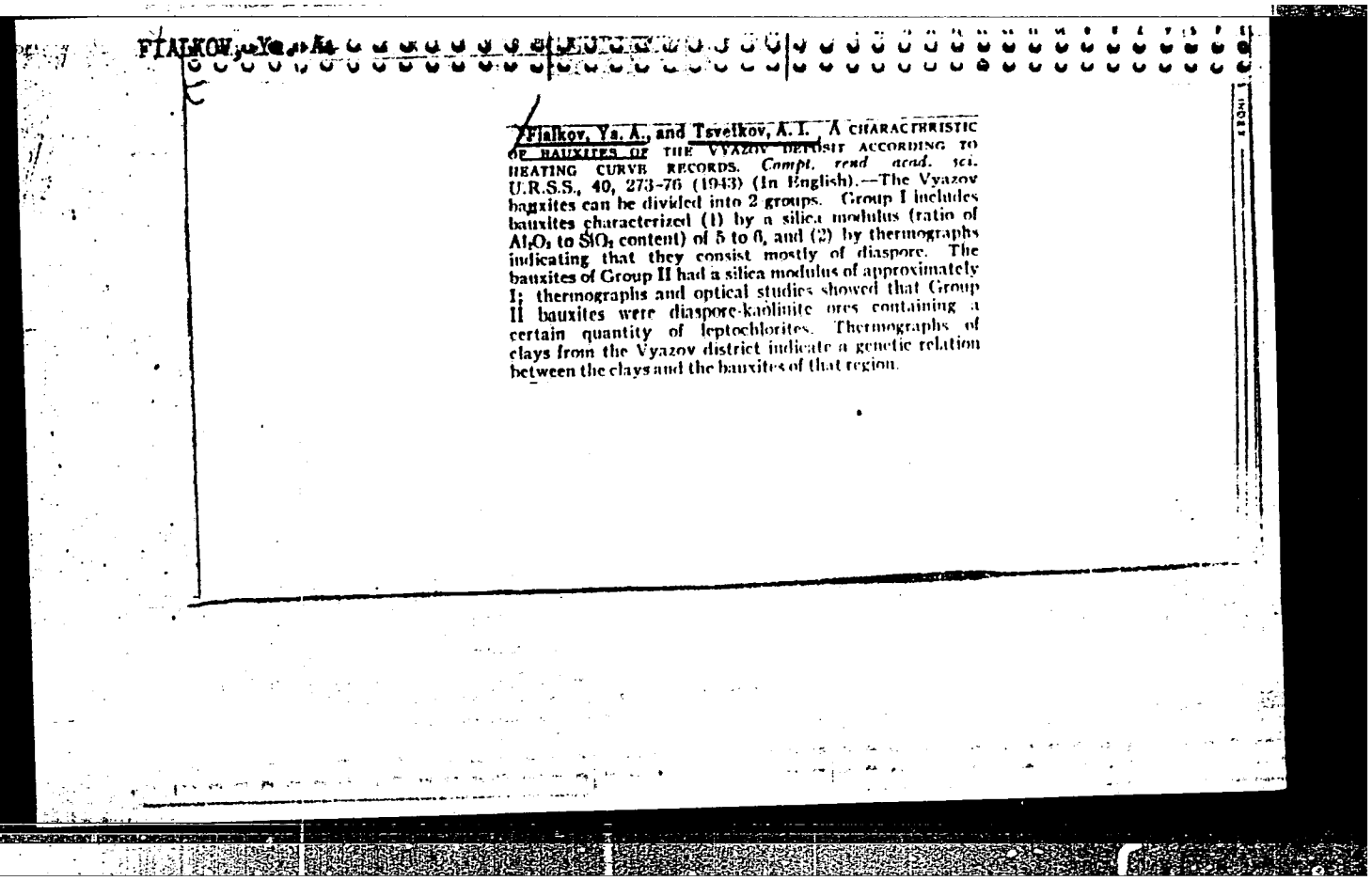
1. Gor'kovskiy gosudarstvennyy universitet im. N.I. Lobachevskogo. Predstavleno akademikom A.L. Kursanovym.
(Plants—Assimilation)



FIALKOV

AUTHOR INDEX

Fialkov, Ya. A., and Shargorodskii, S. D. Obtaining aluminum oxide from the product of sintering sodium sulfate with kaolin. *Zapiski Inst. Khem., Ukrain. Akad. Nauk*, 5, 487-505 (1938). Experiments were conducted to extract Al_2O_3 from the product of sintering sodium sulfate with kaolin. Na_2SO_4 and kaolin (1:1) and 0.9 gram atom of C were calcined for 1 hr. at 1150° to 1200°. The product obtained had the following composition: SiO_2 39.84, Al_2O_3 37.65, Fe_2O_3 1.50, CaO + MgO 1.24, Na_2SO_4 7.11, and Na_2O 12.07%. Both acid and alkaline methods of extracting the Al_2O_3 were tried. In the former, the product was treated by boiling for 1 hr. with H_2SO_4 and HNO_3 of various concentrations. Results show that 5 to 7% acid solutions give an extraction of 80% Al_2O_3 along with considerable amounts of SiO_2 and Fe_2O_3. The iron can be eliminated by means of $KAlFe(CN)_6$ and $K_4Fe(CN)_6$ followed by a treatment of *sindoff* which is prepared by boiling kaolin with a 4 to 5% solution of H_2SO_4 and then washing out the SiO_2. To find a method of extracting the Al_2O_3 from the solutions, experiments were conducted to establish the thermal decomposition of $NaNO_3$ in the presence of Al_2O_3 or $Al(NO_3)_3$. The results, given in curves, indicate that the aluminate starts to form above 600° and that the reaction is most intense at 700° to 750°. In the alkaline method of extracting, the product was calcined for 1 to 2 hr. in a Pt electric oven at 1100° with a mixture of soda and $CaCO_3$. Ratios of Na_2CO_3/Al_2O_3 and $CaCO_3$/SiO_2 were [illegible]. The sintering product was boiled with [illegible] of the filtrates showed a possible extraction of [illegible] Al_2O_3. No iron was found.



FIALKOV, Ya. A.

Fialkov, Ya. A., and Tsvetkov, A. I. A CHARACTERISTIC OF BAUXITES OF THE VYAZOV DEPOSIT ACCORDING TO HEATING CURVE RECORDS. *Compt. rend acad. sci. U.R.S.S.*, 40, 273-76 (1943) (In English).—The Vyazov bauxites can be divided into 2 groups. Group I includes bauxites characterized (1) by a silica modulus (ratio of Al_2O_3 to SiO_2 content) of 5 to 6, and (2) by thermographs indicating that they consist mostly of diaspore. The bauxites of Group II had a silica modulus of approximately 1; thermographs and optical studies showed that Group II bauxites were diaspore-kaolinite ores containing a certain quantity of leptochlorites. Thermographs of clays from the Vyazov district indicate a genetic relation between the clays and the bauxites of that region.

C

Adsorption properties of kaolins. Ya. A. Fialkov. *Zhur. Prikład. Khim.*, 18 [4/6] 221-30 (1945).--A study was made of the adsorptive capacity of various kaolins from the U.S.S.R. toward methylene blue and of the effect of acid and hydroxide on the adsorptive capacity of a kaolin. Five kaolins were tested, the adsorption being determined on air-dry samples and on samples calcined for 2 hr. at 600°. The acid-hydroxide treatment consisted in boiling a previously calcined sample for 1 hr. in 0.1 or 1 *N* HCl followed by NaOH and washing the sample thoroughly. Besides methylene blue salts of alkaloids and nitrogenous bases, dyes, iodine, and colloidal silver were used as adsorbates. The adsorptive capacity was deeply affected by the acid-hydroxide treatment. The adsorptive capacity of a particular kaolin toward a given substance was changed by this treatment in some instances two- to fivefold, and in others it was completely destroyed. Generally, the acid treatment increased the adsorption of acid dyes, negatively charged Ag, and I^- and decreased the adsorption of basic dyes, alkaloids, and some nitrogenous bases. The observed phenomena are explained by the amphoteric nature of kaolin and the effect of acids and hydroxides on changing the sign of the charge. It is therefore possible to change the adsorptive capacity and selectivity of kaolins by appropriate treatment. M.Ho.

SHOKOL, A. A., FYALKOV, YA. A.

Amines

Molecular compounds of hydrogen peroxide with organic amines and their derivatives. Ya. A. Fyalkov, A. A. Shokol. Ukr.khim.zhur. 15 No. 3, 1949.

Monthly List of Russian Accessions, Library of Congress, September 1952. Unclassified.

1. FYALKOV, YA. A.; SHAKH, TS. I.

2. USSR (600)

4. Sulfanilamide

7. Intracomplex salts of sulfanilamide preparations, Ukr. khim. zhur., 17, No. 4, 1951.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

TKACHENKO, D. S., FYALKOV, YA A.,
DRAKINA, N. V.

Pharmacy - Study and Teaching

Letter to the editor of "Aptechnoe delo." Apt. delo no. 4, 1952.

Monthly List of Russian Accessions. Library of Congress. November, 1952. UNCLASSIFIED

1. FYALKOV, Ya. A.; KAGAN, F. Ye.

2. USSR (600)

4. Volumetric Analysis

7. Use of a hydrochloric solution of iodine trichloride in volumetric analysis. Part 2. Ukr. khim. zhur. 18, No. 1, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

1. FYALKOV, Ya. A.; KAGAN, F. Ye.

2. USSR (600)

4. Volumetric Analysis

7. Use of a hydrochloric solution of iodine trichloride in volumetric analysis. Part 1. Ukr. khim. zhur. 18, No. 11, 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953. Unclassified.

FYALKOV, YA. A., SHEVCHENKO, F. D.

Iodides

Physicochemical investigations of iodide solutions. Part 8, Systems: zinc and cadmium tetra-amminoiodides - iodine. Zhur. ob. khim. 22 no. 7, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

FYALKOV, YA., KUZ'MENKO, A. A.

Compounds, Complex

Physicochemical investigation of the system phosphorus trichloride-bromine. Part 2. Zhur. ob. khim, 22, No. 8, 1952

Monthly List of Russian Accessions, Library of Congress, November 1952. Unclassified.

FYALKOV, YA. A., KUZ'MENKO, A. A., ABARBARCHUK, I. L.

Halides

Investigation of polyhalides, formed by non-polar halides., Izv. Sekt. plat. i blag. met., no. 26, 1952.

9. Monthly List of Russian Accessions, Library of Congress, May 1952, Uncl.

FIALKOV, Ya. A.

10891 Complex Halides of Phosphorus Formed by PCl_5 and PBr_5 With the Halides of Iodine. (Russian) I.D. Kuzvka and Ya. A. Fialkov. Doklady Akademii Nauk SSSR, new ser., v. 83, Mar. 21, 1952, p. 415-417.

Experiments were made on the formation of the above complexes. Data are tabulated.

FYALKOV, Ya.A.

Study of the reactions of isotopic iodine exchange in systems containing inorganic iodides. Ukr.khim.zhur. 19 no.4:356-364 '53. (MLRA 8:2)

1. Institut obshchey i neorganicheskoy khimii Akademii nauk USSR.
(Iodine--Isotopes) (Iodides)

FYALKOV, Ya. A., SHCP, O. I.

Systems (Chemistry)

Physicochemical investigation of systems containing iodine halides and halides of other elements. Part 10. Systems IBr-KBr and IBr-$AlBr_3$. Zhur. ob. khim. 23, No. 3, '53.

Monthly List of Russian Accessions, Library of Congress June 1953. UNCL.

FYALKOV, Ya. A.; SHOR, O. I.

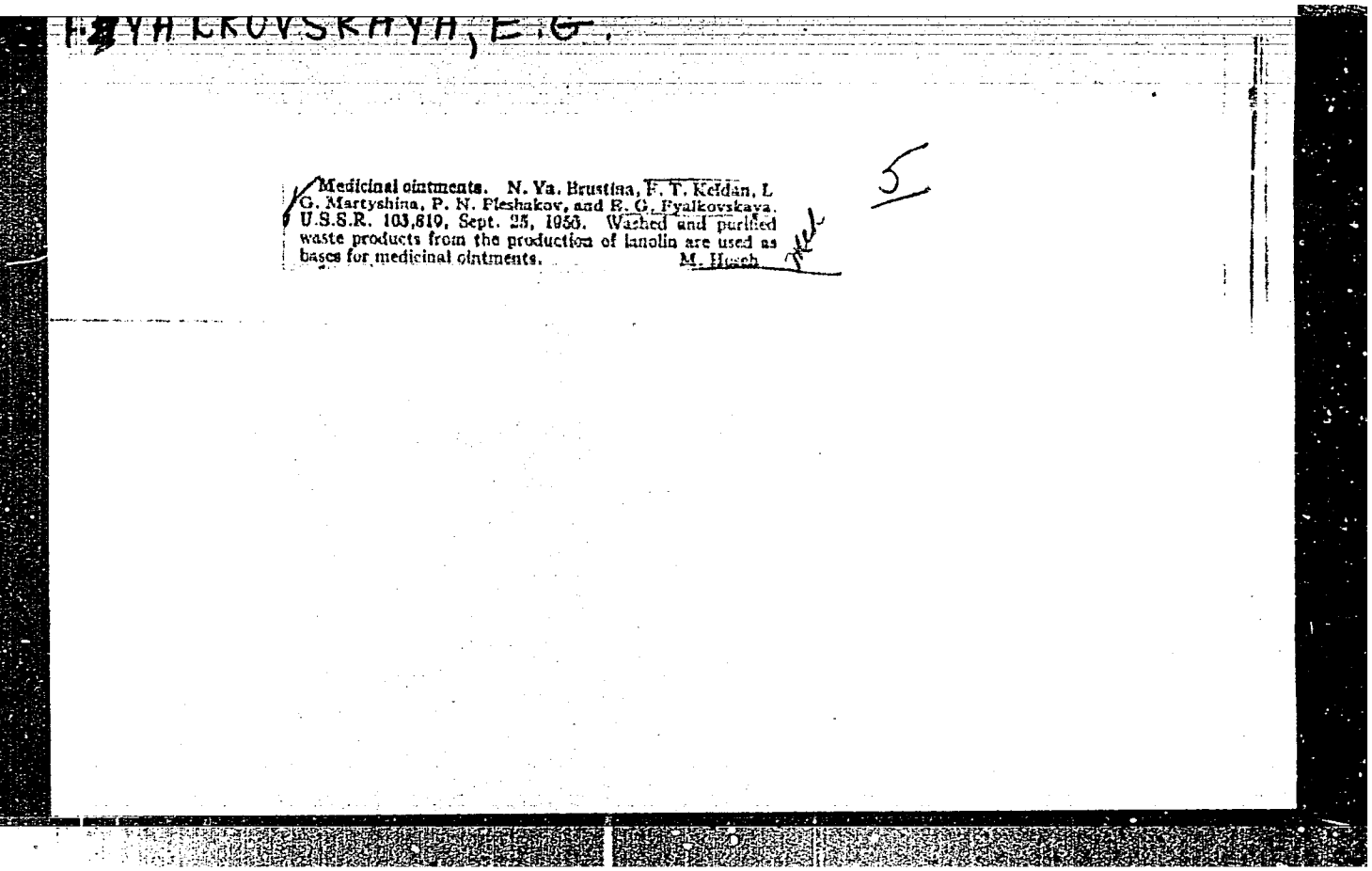
Compounds, Complex

Structure and nature of complex compounds formed during the interaction of iodine halides with halides of potassium or aluminum. Zhur. ob. khim. 23, No. 3, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

FYALKOV, Yu. Ya.

The exchange reactions of iodine in systems that contain iodine chloride by means of tagged atoms [illegible]
and Yu. Ya. Fialkov. [illegible]



FYALKOVSKAYA, E. G.

5

Medicinal ointments. N. Ya. Brustina, F. T. Keldan, L. G. Martyshina, P. N. Pleshakov, and E. G. Fyalkovskaya. U.S.S.R. 103,819, Sept. 25, 1955. Washed and purified waste products from the production of lanolin are used as bases for medicinal ointments. M. Hosch

FIALKOVSKAVA, O. V.

The spectral distribution of the sensitivity of cuprous oxide photocells and their use for spectrometric measurements. O. Fialkovskaya. Mem. phys. Ukrain 4, 53-61 (1935); Chem. Zentr. 1936, II, 2101. Cuprous oxide photocells were prepd. by reduction in hot aq. glycerol solns. of varying concns. (30, 40, 60 and 100 drops glycerol per 100 cc. water). The spectral sensitivity of elements so prepd. varies and is optimum in the case of those prepd. with 40 drops of glycerol per 100 cc. water. On the curve for the optimal element the max. sensitivity is at about 5000 A.; when 100 drops of glycerol are used, the max. is shifted by 400-500 A. toward the infrared; with 60 drops the sensitivity in the infrared region is even neg. A 2nd max. lies at about 7200 A. Because of such fluctuations in the sensitivity of the photoelements in various spectral regions, these elements cannot be used for photometric evaluation of sources of white light with different energy distributions. However, because of their high spectral sensitivity they are very convenient for work with monochromatic light in detg. absorption or other optical properties of materials. M. G. Moore

FYALKOVSKAYA, O.V.; TERENIN, A.N.

Photoreaction of pyridine in the adsorbed state. Izv.Akad.nauk. SSSR;Khim. otd. no.3:226-241 May-June 1951. (CIML 20:9)

1. Physics Scientific-Research Institute of Leningrad State University imeni A.A. Zhdanov.

FYALKOVSKAYA, O. V.

Phosphors

Correlation of intensities of emission-spectrum bands of alkyl-halide phosphors activated by thallium. Vest. Len. un 7, No. 9, 1952.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

FIALKOVSKAYA, R. P.

C

6-5.95

New method of manufacturing small caliber paraboloid reflectors. Z. I. BRONSHTEIN AND R. P. FIALKOVSKAYA. *Steklo i Keram. Prom.*, 1946, No. 1-2, pp. 8-11.—The method consists essentially in heating a glass disk in a cast-iron cup having a parabolic shaped bottom. The cup is heated to 250°C. in an electric furnace and then removed, and the inside is coated by spraying with a clay suspension (kaolin passing through a sieve having 2500 openings per cm.^{2} and diluted to give 50 gm. clay per 150 cc. water) or by rubbing with lump graphite. The cup is then heated to 650° and removed, the glass disk is centered in the cup, and the cup is again heated to 650°. After 10 min. at 650° the furnace is cooled following the annealing curve for Foucault glass of the given thickness. When the temperature reaches 300°, the reflector is removed and placed in a heated asbestos box. The glass disk is cut from high grade Foucault glass which must be free of all defects that lower the optical and thermal properties of the reflector. The disk should not be thicker than 4 to 4.5 mm. and should be as close to the size of the reflector as possible (for a 250-mm. reflector, the disk was 272 mm.). The convex side of the reflector is ground to remove a layer of about 0.1 to 0.15 mm. and given a final polish. The graphite offers greater protection to the cup surface than does the clay suspension, but the former must be renewed every 5 to 6 days while the latter will last for 1.5 to 2 months of continuous operation of the cup. Reflectors made by this process had an average coefficient of reflection of 0.85, average focal distance of 100 ± 1 mm., and aberration deviations up to 2 mm. The operations of silvering, coppering, and applying protective coatings remained the same. This process has proved successful in the manufacture of reflectors 250, 350, 400, and 450 mm. in diameter.
B.Z.K.

FYDRYK, Janusz; LACKI, Leon; CIESLAK, Elzbieta

Treatment of hypochromic anemia in underweight infants with oral iron preparations. Pediat. pol. 37 no.9:919-926 S '62.

1. Z I Kliniki Pediatrycznej PAM w Szczecinie Kierownik: doc. dr med. J. Starkiewiczowa i z Centralnego Laboratorium Panstwowego Szpitala Klinicznego Nr 1 w Szczecinie Kierownik: lek. H. Sliwinska.
(ANEMIA HYPOCHROMIC) (IRON) (INFANT NUTRITION DISORDERS)

FYDRYK, Janusz; SIKORA, Aleksandra; SZUBINSKI, Zbigniew

Concentration capacity of the urine according to its osmolality and specific gravity in infancy. Ped. Pol. 40 no.4:363-367 Ap'65.

1. Z I Kliniki Pediatrycznej Pomorskiej Akademii Medycznej w Szczecinie (Kierownik: prof. dr. med. J. Starkiewiczowa).

OZEROV, R.P.; FYKIN, L.Ye.; RANNEV, N.V.; ZHDANOV, G.S.

Neutron diffraction study for the localization of hydrogen atoms in the structure of lithium sulfate monohydrate $Li_2SO_4 \cdot H_2O$. Dokl. AN SSSR 148 no.5:1069-1072 F '63. (MIRA 16:3)

1. Fiziko-khimicheskiy institut im. L.Ya.Karpova. Predstavleno akademikom N.V.Belovym.
(Neutron diffraction crystallography) (Lithium sulfate) (Hydrogen)

OZEROV, R. P.; FYKIN, L. Ye.; RANNEV, N. V.

"Neutron-diffraction investigation of the crystal structure of lithium sulphate monohydrate, $Li_2SO_4H_2O$."

report submitted for 6th Gen Assembly, Intl Union of Crystallography, Rome, 9 Sep 63.

Karpov Inst of Phys Chem, Moscow.

1. FYICV, N.

2. USSR (600)

4. Retail Trade

7. Systematic control over commercial enterprises. V pom. prefaktivu 13, No. 22 1952

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

S/169/63/000/003/041/042
D263/D307

AUTHORS: Chichinin, I.S. and Fyn, De-I.

TITLE: On the problem of distortions of hodographs of reflected waves during grouping

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 3, 1963, 15, abstract 3D88 (In collection: Vopr. dinamich. teorii rasprostr. seysmich. voln. 4. L., Leningr. un-t, 1962, 194-204)

TEXT: The authors studied the distortions of reflected wave signals in longitudinal grouping for two type of the distribution of the sensitivity of seismic receivers - rectangular and triangular. Calculations of signals at the output of groups were carried out for the input signal in the shape of a sinusoid filling the bell impulse. Formulas were obtained allowing an estimation of the maximum permissible base of grouping, for which the distortions introduced during the arrivals of the main phases of the signal do not exceed a certain value. Nomographic methods are shown for the

Card 1/2

On the problem ...

estimation of possible distortions when the initial form of the signal is known.
[Abstracter's note: Complete translation]

L 04478-67 EWT(1) GG

ACC NR: AR6013872 SOURCE CODE: UR/0274/65/000/011/A056/A056

AUTHORS: Lukin, A. A.; Fyn Sishan'

TITLE: Transient processes in a switching circuit using semiconductor diodes

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. 11A432

REF SOURCE: Tr. Mosk. energ. in-ta, vyp. 55, 1965, 185-191

TOPIC TAGS: switching circuit, transistorized circuit, circuit theory, semiconductor diode, transient flow /DG-Ts23 semiconductor diode

ABSTRACT: A calculation is presented of the transient process in a switching circuit using semiconductor diodes as proposed by V. N. Malinovskiy (V. N. Malinovskiy and R. R. Kharchenko. Izmeritel'naya tekhnika, 1960, No. 11). The circuit contains two diodes connected in opposition. Diode 1 is connected by the cathode to the ground. A positive control signal is fed via resistance R1 to the point connecting the anodes of diodes 1 and 2. The cathode of 2 is connected via resistance R2 to the negative terminal of the power supply source (-E). The output signal is taken off the cathode of 2; it equals -E when the diodes are nonconducting; it equals ≈ 0 when the control voltage triggers both diodes. With the input of control voltage, forward currents begin to flow through the diodes—the process of establishing these currents can be considered practically instantaneous. The process of accumulating the charge in the bases in the case of brief pulses of forward current can not be successfully

Card 1/2 UDC: 621.374.36:621.382.2

L 04478-67

ACC NR: AR6013872

completed. Upon termination of the control pulse, a reverse dissipation current flows through 1 during a certain time and a forward current flows through 2. Upon termination of the "little shelf" of reverse current of 1, the voltage on it becomes negative and reaches -E. The "little shelf" of reverse current in 2 starts from this moment, after completion of which the reverse current of 2 decreases exponentially. Analytic expressions were obtained for determining the duration of the separate parts of the transient process. An experiment conducted with a circuit using type DG-Ts23 semiconductor diodes showed good agreement with calculations. Bibliography of 3 citations. V. P. [Translation of abstract]

SUB CODE: 09

Card 2/2 egh

HUNGARY/Nuclear Physics - Structure and Properties of Nuclei C-4

Abs Jour : Ref Zhur - Fizika, No 12, 1958, No 26938

Author : Fyorgyi Geza, Uberall Herbert
Inst : Not Given
Title : Connection Between the Recoil of the Nucleus and the Transverse Polarization of the Beta Particles.

Orig Pub : Magyar tud. akad. Korp. fiz. kutato int. kozl., 1958, 5, No 6, 572-576, IV.

Abstract : Using the general Hamiltonian of Lee and Yang, corresponding to parity non-conservation, the authors calculate the probability of β decay for given momentum of neutrino and momentum and polarization of the electron. At a fixed momentum of the neutrino, the transverse polarization of the β particles differs from zero. A possible experiment for the detection of this polarization is discussed.

Card : 1/1

FYRSHIROTU, M.

Savings accounts in the Rumanian People's Republic. Fin. SSSR 18 no.12:78-83 D '57. (MIRA 11:1)

1.Zamestitel' Glavnogo nachal'nika upravleniya Sberegatel'noy i depozitnoy kassy Rumynskoy Narodnoy Respubliki.
(Rumania--Savings banks)

1. FYUKS, N. A., PROF.

2. USSR (600)

3. Windbreaks, shelterbelts, etc.

4. Data on the protective action of forest strips against wind. Les i step' 5 No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

L 13507-66

ACC NR: AP6007039 SOURCE CODE: HU/0018/65/017/003/0253/0257

AUTHOR: Sari, Balint--Shari, B.; Nagy, Imre -- Nadj, I.; Fulop, Tibor--Fyulep, T.

ORG: Medical University of Debrecen, I. Medical Clinic, Institute of Anatomy (Debreceni Orvostudomanyi Egyetem, I. Belklinika es Anatomiai Intezet)

TITLE: Effect of hypothalamic lesion on the serum cholesterol level

SOURCE: Kiserletes orvostudomany, v. 17, no. 3, 1965, 253-257

TOPIC TAGS: brain, neurology, CNS, blood serum, animal physiology

ABSTRACT: The serum cholesterol level was determined weekly following electric lesion of the anterior and posterior nuclei of the hypothalamus. The serum cholesterol level rose following injury to either the anterior or the posterior hypothalamic nuclei. The maximum increase was reached by the end of the third week and the level returned to nearly normal by the end of the fourth week and the level returned to nearly normal by the end of the fourth week. Orig. art. has: 5 figures. [JPRS]

SUB CODE: 06 / SUBM DATE: 08Jul64 / ORIG REF: 010 / OTH REF: 013

Card 1/1 HW

S/079/61/031/007/004/008
D229/D305

15.8170

AUTHORS: Kreshkov, A.P., Karateyev, D.A., and Fyurst, V.

TITLE: Study of the interaction of some alkyl- and arylalkoxysilanes with boric acid

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 7, 1961, 2139 - 2143

TEXT: This is a report on syntheses and properties of new polymeric silico-boron-organic compounds namely: polymethylsilyl borate $(CH_3SiO_3B)_n$, polyethylsilylborate - $(C_2H_5SiO_3B)_n$, polyphenylsilylborate - $(C_6H_5\ SiO_3B)_n$, diethylpolysiloxaneborate $\{[(C_2H_5)_2Si]_3(BO_3)_2\}_n$ and $\{[(CH_3)(C_6H_5)SiO_{1.5}]_3\ B\}_n$, synthesized by interaction of boric acid with methyltriethoxysilane, ethyltriethoxysilane, phenyltriethoxysilane, diethyl-diethoxysilane and methylphenyldiethoxysilane respectively. Silico-boron-organic compounds have prac-

Card 1/5

Study of the interaction of ...

tical applicability. They can be synthetized by interaction of silico-organic compounds with inorganic boron compounds (BBr_3, BCl_3, BF_3, B_2H_6, B_2H_5Br etc.) and by the interaction of alkyl/aryl/alkoxy- or halogenosilanes with boric acid. Tri(trialkylsilyl)borates were also obtained by the interaction of boric acid with trialkylsilanols (Ref. 4: N.F. Orlov, and B.N. Dolgov, Voronkov, M.G., Avt. svid 115157,1958) and by the interaction of boric acid with trialkylsilanes (Ref. 3: N.F. Orlov, B.N. Dolgov, and M.G. Voronkov, Trudy konferentsii po khimii i prakticheskomu primenenyu kremneorganicheskikh soedineniy (Conference on Chemistry and Practical Application of Silico-Organic Compounds) vyn. 1. TSBTI. L. 161, 1958). M.G. Voronkov and B.N. Zgonnik determined that the interaction of dimethyldichlorosilane with boric acid formed dimethylpolysiloxaneborate; the interaction of methyltriethoxysilane with boric acid formed $(B_2O_3 \cdot 4CH_3SiO_{1.5})n$; interaction of dimethyldiethoxysilane with boric acid formed $[(B_2O_3 \cdot 6(CH_3)_2SiO]n$ which can be represen-

Card 2/5

Study of the interaction of ...

ted as 2 $\{[(CH_3)_2SiO_{1.5}]_3B\}_n$ the last reaction being as follows: $3n\ B(OH)_3 + 6n(CH_3)_2\ Si(OC_2H_5)_2 \rightarrow [B_2O_3 \cdot 6(CH_3)_2\ SiO]n + 9nC_2H_5OH + n\ B(OC_2H_5)_3$. Kreshkov and associates (Ref. 6: A.P. Kreshkov, S.S. Vil'borg, Tr. MKhTI im. D.I. Mendeleyeva, 12, 40/1947, ZhOKh, 18, 172, 1948) found that at the high temperature alkyl/aryl/methoxy- or ethoxysilanes reacted with boric acid to form the methyl or ethyl esters of boric acid which colored the flame green. The above secondary reaction of the formation of ethyl ester of boric acid also took place. Molecular weight of the synthesized polymeric compounds of the type $[(R_2Si)_3(BO_3)_2]n$ and $\{[(CH_3)(C_6H_5)\ SiO_{1.5}]_3\ B\}_n$ was determined by Rast's method with benzoic acid. For all three compounds $n \approx 8$. Combustion microanalysis was used to determine the amounts of the constituents of products. Silicon was determined by the "wet method" (Ref. 10: A.P. Kreshkov, G.D. Nessonova, ZhOKh, 19, 660, 1949). Boron was determined as boric acid by titration with 0.1 N NaOH in the presence of mannitol with a phenolphthalein

Card 3/5

Study of the interaction of ...

indicator after the weighed amount ($\sim$0.1 gr) of substance was dissolved in an excess of sodium hydroxide and neutralized with 0.1 N hydrochloric acid using methyl red indicator. Qualitative tests for the presence of hydroxyl and ethoxy were negative. The infra-red spectra of obtained polymeric silico-boron-organic compounds were studied. The infra-red spectra of $(CH_3SiO_3\ B)_n$ and of $(C_2H_5SiO_3\ B)_n$ had absorption bands of different wave-lengths characteristic for different groups and bonds: 9.60 and 9.55 μ (Si-O), 740 and 7.30 μ (B-O), 12.75 and 12.70 μ ($Si-CH_3$). 3.20 and 3.15 μ (C-H) and 6.5 μ (CH_3) which was in agreement with data from literature (Ref. 12: A.P. Kreshkov, V.A. Bork, L.V. Myshlyayeva, and G.D. Nessonova, Analiz kremniyorganicheskikh soedineniy (Analysis of Silicon Organic Compounds) GKhI, M., 1954). There was no absorption band of the wave-length of 2.71 μ due to hydroxyl groups, which proved the absence of this group in synthesised polymeric silico-boron-organic compounds. X-ray analysis for all compounds of the

S/080/61/034/012/011/017
D227/D305

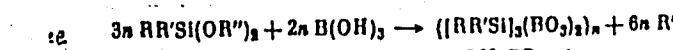
S 3700

AUTHORS: Kreshkov, A.P., Karateyev, D.A., and Fyurst, V.

TITLE: Investigating reactions of organic silicon compounds containing vinyl groups connected directly with a silicon atom, with boracic and phosphoric acids and phosphorus pentoxide

PERIODICAL: Zhurnal prikladnoy khimii, v. 34, no. 12, 1961, 2711 - 2716

TEXT: This is a study of reactions of various unsaturated compounds containing Si-CH=CH_2 bonds and functional groups (-OC_2H_5, CH_3COO-) attached to a silicon atom. From the products obtained and from the reactions with alcohols, esters, acetic acid etc., the authors were able to establish the mechanism of the reactions. They found that di-functional and tri-functional unsaturated organosilicons react with boracic acid in the following manner:



i.e. $3n\,RR'Si(OR'')_2 + 2n\,B(OH)_3 \rightarrow (RR'Si)_3(BO_3)_2)_n + 6n\,R''OH$,

where R — CH_2, R' — CH_2=CH —, R'' — CH_3CO —).

Card 1/4

S/080/61/034/012/011/017
D227/D305

Investigating reactions of ...

$$n\,RSi(OR')_3 + n\,B(OH)_3 \rightarrow (RSiO_3B)_n + 3n\,R'OH,$$

where R — CH_2=CH —, R' — C_2H_5).

from which it is clear that only Si-O-C bonds react while Si-O-Si bonds remain intact. The reactions of divinyltetraethoxydisiloxane and vinyltriethoxysilane with P_2O_5 -

$$\left.\begin{array}{l} n\,[RSi(OR')_2]_2O + n\,P_2O_5 \\ 2n\,RSi(OR')_3 + n\,P_2O_5 \end{array}\right\rangle \left[\begin{array}{l} O_{1/2} \quad O \\ RSi-O-P-O_{1/2} \\ OR' \quad OR' \end{array}\right]_{2n} + n\,R'_2O,$$

where R — CH_2=CH —, R' — C_2H_5 —).

leads to the formation of the identical products and show that both Si-O-C and Si-O-Si take part in the reaction. The reaction of methylvinyldiacetoxysilane with phosphoric acid is as follows:

$$3n\left[\begin{array}{l} CH_2{=}CH \\ CH_3 \end{array}\!\!>\!Si(OCOCH_3)_2\right] + 2n\,H_3PO_4 \rightarrow$$

$$\rightarrow [(CH_3)CH_2{=}CHSi]_3(PO_4)_2)_n + 6n\,CH_3COOH.$$

Card 2/4

31474
S/080/61/034/012/011/017
D227/D305

Investigating reactions of ...

The products of all the reactions representing low molecular weight organosilicon-boron and organosilicon-phosphorus polymers were examined by chemical and physical methods to establish their empirical and structural formulae. Polymerization of unsaturated organosilicon compounds has been found to be more difficult than that of the unsaturated hydrocarbons and to require special catalyzers and high pressures, owing to the passivating effect of silicon on the double bonds; this explains the preservation of $Si-CH=CH_2$ bonds in these polymers. In all cases the analysis showed good agreement with the empirical formulae. Vinyldiethoxypolysiloxanephosphate $([CH_2 = CHSi(OC_2H_5)_2PO_{2.5}]_2O)_n$ was prepared by heating the monomer with P_2O_5. The product obtained was in the form of lemon colored mass insoluble in common organic solvents but soluble in alkali. When methylvinyldiacetoxysilane was heated with phosphoric acid at 180°C acetic acid was liberated and the product was obtained in the form of a solid, soluble in ethanol, less soluble in chloroform, but easily hydrolyzed in aqueous and alkaline solutions. All the products obtained were analyzed to determine Si, C, H, B and P contents and also presence of alkoxy groups and double bonds. Infra-

Card 3/4

Investigating reactions of ....

31474
S/080/61/034/012/011/017
D227/D305

red spectra were determined by Yu.Ya. Mikhailenko. The authors suggest that organosilicon-boron and -phosphorus compounds may be added to various plastic masses in order to give them thermal stability and resistance to oils, and to improve some of the properties of cement solutions. There are 1 figure and 22 references: 19 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: R. Nagel, Ch. Tambowski, H. W. Post, J. Org. Chem. 16, 1768, 1951; Bellamy, Gerard, Lappert, J. Chem. Soc., June, 2412, 1958.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut im. D.I. Mendeleyeva (Moscow Institute of Chemistry and Technology im. D.I. Mendeleyev)

SUBMITTED: February 28, 1961

Card 4/4

KRESHKOV, A.P.; KARATEYEV, D.A.; FYURST, V.

Reactions of some alkyl and aryl alkoxy derivatives of silane with boric acid. Zhur.ob.khim. 31 no.7:2139-2143 JI '61. (MIRA 14:7)

1. Moskovskiy khimiko-tekhnologicheskiy institut imeni D.I. Mendeleyeva.

(Silane) (Boric acid)

S/191/62/000/003/009/010
B101/B147

AUTHORS: Kreshkov, A. P., Karateyev, D. A., Fyurst, V.

TITLE: Methods for the quantitative determination of silicon, phosphorus, and boron in organoborosilicon and organophosphorosilicon compounds

PERIODICAL: Plasticheskiye massy, no. 3, 1962, 63-65

TEXT: The following analysis methods are described: (1) Determination of Si, (a) wet oxidation of the substance to be analyzed, and determination as SiO_2; (b) photocolorimetric determination as silicon molybdenum blue at pH = 4.1-4.4 if no Si-C or Si-C-P bonds are present; (c) gravimetric determination of SiO_2 according to K. A. Andrianov et al. (ZhOKh, 26, 267 (1956)) if Si-C bonds are present. Error: 0.20-0.35%. (2) Determination of P in polymers with Si-O-P bonds: dissolution in 0.1 N NaOH, heating without boiling, cooling and titration of NaOH excess with 0.1 N HCl (methyl orange), use of an NaH_2PO_4 solution of similar concentration as standard solution; error: ± 1% (3) Determination of B: dissolu-

Card 1/2

tion in NaOH, neutralization with 0.1 N HCl (methyl red), addition of mannite and titration with 0.1 N NaOH (phenolphthalein); error: within +0.22 and -2.85%. (4) Simultaneous determination of B and P: dissolution in 0.1-0.2 N NaOH, titration with 0.1-0.2 N HCl until NaH_2PO_4 forms (methyl orange), calculation of P content; addition of mannite, titration of mannitoboric acid with 0.1 N NaOH (phenolphthalein). Here, NaH_2PO_4 too, is titrated into Na_2HPO_4. Errors from three analyses were: -0.41 to +0.22 for B and -0.21 to +0.76% for P. There are 5 tables and 11 Soviet-bloc references.

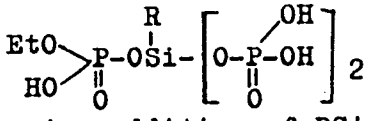
Card 2/2

S/079/63/033/001/020/023
D204/D307

AUTHORS: Kreshkov, A. P., Karateyev, D. A., Fyurst, V. and Pavlova, E. N.

TITLE: A study of the reactions of dialkyldichlorosilanes and alkyltrichlorosilanes with potassium dihydrogen phosphate

PERIODICAL: Zhurnal obshchey khimii, v. 33, no. 1, 1963, 261-265

TEXT: Compounds  , where R=Me or Et were obtained by the dropwise addition of $RSiCl_3$ in absolute ether to KH_2PO_4/abs. Et_2O, over 1 hour, with cooling. The mixtures were then gently boiled for 3 hours, and the solid products were subsequently refluxed for 7 - 8 hours with abs. alcohol. The solutions were then filtered and the alcohol was removed from the filtrates. The

Card 1/2

S/079/63/033/001/020/023
D204/D307

A study of the reactions ...

products were then dried to constant weight at 100 - 150°C. Compounds $(HO)_2P(O)-O-Si(R)(R')-O-P(O)(OH)_2$ (where (a) R=R'=Me, (b) R=R'=Et, and (c) R=Me, R'=vinyl) were prepared in an anlogous manner, from ethereal KH_2PO_4 and (a) Me_2SiCl_2, (b) Et_2SiCl_2 and (c) $CH_3(CH_2=CH)SiCl_2$, except that the refluxing with absolute alcohol was only for 2 hours. The above 5 compounds, which were thus prepared in 85 - 85% yields, are new. Two of the structures were confirmed by ir spectroscopy. There are 2 figures and 2 tables.

ASSOCIATION: Moskovskiy khimiko-tekhnologicheskiy institut imeni D. I. Mendeleyeva (Moscow Institute of Chemical Technology imeni D. I. Mendeleyev)

SUBMITTED: December 1, 1961

Card 2/2

DAVANKOV, A.B.; FYUSHTI, M.Sh.

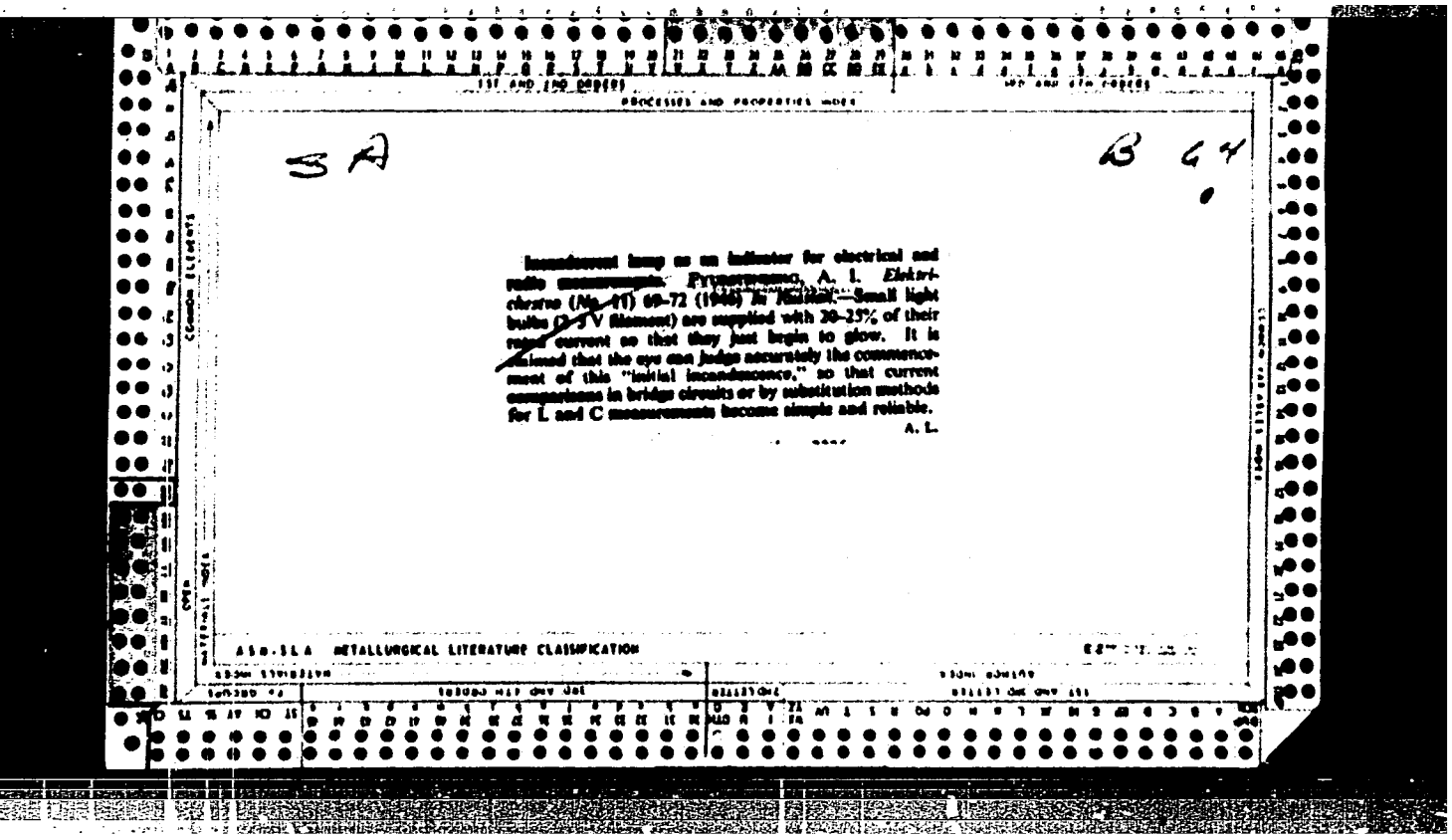
Copolymerization and properties of three-component copolymers of vinyltoluene, α-methylstyrene, and divinylbenzene. Zhur. prikl. khim. 36 no.9:2044-2047 D '63. (MIRA 17:1)

WE.

621.317.31.082.5:621.362 1577

Electric Precision Measurements by Means of Incandescent Lamp Used as Indicator of Current Equality in Two Circuits.—A. I. Furstenberg. (C. R. Acad. Sci. U.R.S.S., 1945, Vol. 48, No. 1, pp. 23–26. In English.) "In an incandescent lamp with a metal filament the appearance of a barely visible light emission is a very fine criterion for visual estimation of the heating current. A circumstance of interest for metrology is that under conditions of a vanishingly small light emission by the filament, slight increments in the current passing through the lamp have a considerable effect upon brightness." Experiment shows that in the neighbourhood of this threshold light emission, an increase of $\pm 0.5\%$ in current results in $\pm 50\%$ increase in brightness. The possible use of the method for determining the equality of the currents in circuits is considered, with a brief discussion of the errors involved in using it for comparing inductors and capacitors. Errors are limited to a few parts in ten thousand.

Moscow State Inst. Measures + Measuring Instruments



Incandescent lamp as an indicator for electrical and radio measurements. Pyatnovskaya, A. I. *Elektrichestvo* (No. 11) 69–72 (1946) in Russian.—Small light bulbs (2–3 V filament) are supplied with 20–25% of their rated current so that they just begin to glow. It is claimed that the eye can judge accurately the commencement of this "initial incandescence," so that current comparisons in bridge circuits or by substitution methods for L and C measurements become simple and reliable.
A. L.

A.S.M.-S.L.A. METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

33

03

Determination of Impedance, Volume, Inductivity and Frequency Using the Method of Proportional Currents. A. Fureljulberg. *Reports of the Academy of Sciences of U.S.S.R.*, v. 61, no. 4, 1948, p. 273-276

14C

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

W E.

Measurements & Test
Gen.

3185

621.317.3

Measurement of Impedance, Capacitance, Inductance and Frequency by the Method of Proportional Currents. A. I. Furstenberg. (C. R. Acad. Sci. U.R.S.S., 10th Feb. 1946, Vol. 51, No. 4, pp. 477-480. In English.) A method consisting essentially in equalizing the potential drop across constant nonreactive resistances in series with the impedances. A source of constant voltage and frequency is required.

1419

FYURSTENBERG, A.

20715. Fyurstenberg, A. Lampochka vmesto vol'tmetra. Radio, 1949, No. 6, s. 49

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949

FYURSTENBERG, A.I.

19907 FYURSTENBERG, A.I.

O pribore dlya proverki kohden- satorov, Predlozhennom. V.M. Lukashom. (<<Elektricheskvo>>, N° 10, 1948). Elektrichestvo, 1949, N° 6, s. 86

So: Letopis Zhwrnal Statey - Vol 27 - Moskva, 1949

FYURSTENBERG, A. I.

USSR/Engineering - Generators Nov 49
Capacitance, Measurement of

"Method for Accurately Measuring Capacitance and Inductance," A. I. Fyurstenberg, Engr, Moscow, 4 pp

"Elektrichestvo" No 11

Describes method proposed by author for accurate measurement of capacitance and inductance if effective resistance and frequency of the generator are known. Accuracy (for large and medium values) is ± 0.01%. Includes two diagrams. Submitted 20 Apr 49.

153T29

1ST AND 2ND ORDERS

PROCESSES AND PROPERTIES INDEX

SA

B 64
P

621.317.7 : 621.317.336

157. A pointer instrument as an indicator for comparative measurements, and for impedance measurement. A. I. [illegible]. *Elektrichestvo*, No. 8, 63-7 (*Aug.*, 1950) *In Russian.*

A general investigation of the accuracy attainable with a meter switched from circuit to circuit to compare currents in two networks, or potentials across two resistances, or potentials across a resistance and an impedance. After discussing the inherent indicating and reading tolerances of some standard Russian meters, the following conclusions are arrived at: The voltage comparison method is capable of measuring impedances within a reasonably wide frequency band and also of separately measuring the ohmic and reactive components of an impedance. The accuracy depends mainly on that of the calibrated rheostat and of the potentiometer. A. LANDMAN

Instrument Construction Plant, Min. Elec. Ind.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

FYURSTENBERG, A. M.

USSR/Engineering - Instruments
Insulations

Feb 50

"Device for Measuring the Moisture in Insulations," A. M. Fyurstenberg, Engr, Instr Constr Plant, Min of Elec Ind, 1 p

"Prom Energet" No 2

Criticizes shortcomings of portable faradmeter of Cen Sci Res Lab for Elec Instr Bldg used for measuring insulation moisture: unregulated phase angle in bridge circuit, use of two-gang variable condenser, and buzzer operating on dry cells. Describes variant, assembled in about 2 hr, requiring no calibration.

155T16

PROCESSES AND PROPERTIES INDEX

3A

B 64
0

621.317.334

2462. Measurement of mutual inductance at 50 c/s. A. I. [illegible]. Elektrichestvo, No. 3, 63–4 (March, 1951) In Russian.

A method is described of measuring 0·1 H inductance coils at 50 c/s without standard capacitances or inductances, using only a standard resistance in series with the coils. Voltage drop across coils and resistance standard is compared (the former being proportional to the e.m.f. of mutual induction). The method based on equal deflections in the two readings. The resistance is adjustable by a shunted resistance box, this also enables residual contact error to be eliminated. Capacitance effects are negligible at 50 c/s. The error is only ± 0·2%. B. F. KRAUS

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Simple Method of Independent Capacity Measurement

By A. E. FUERSTENBERG. (From *Elektrichestvo*, No. 8, 1951, pp. 72-74, 2 illustrations.)

The author describes equipment for measurement of the value of a capacity at mains frequency. The equipment includes only one variable and two fixed resistances, the values of which must be precisely [illegible], but no calibrated or variable condensers. The complete equipment includes a transformer, a [illegible] filter, and a simple electronic amplifier. Instructions for applying the method are given, and the maximum error is found by analysis and test to be of the order of 0·3 per cent.

[illegible] proposed method of measurement consists of [illegible] voltage drops in the resistances, R_1 and R_2 [illegible]

[illegible] supply [illegible] sinusoidal and the circuit is in [illegible] U_{R_2}), then obviously

$$\frac{U}{\sqrt{\left(\frac{1}{\omega C}\right)^2 + R^2}} R_1 = \frac{U}{R_1 - R_2} R_2$$

Later, it will be shown that $R_1 \ll 1/(\omega C_x)$, which allows of neglecting the second term under the square root, hence:

$$C_x = \frac{1}{\omega R_1} \frac{R_2}{R_2 - R_1} \quad (1)$$

where C_x = capacity in farads.

R_1, R_2, R_3 = active resistances in ohms

ω = frequency in radians/seconds.

FYURSTENBERG, A. I.

"Measurement of Volume with the help of Differential Scheme on Rectifier," Electricity, Publ. by the Printing House of the Govt. Energy (Electrical) Publ. House, in Moscow, 1952.

FYURSTENBERG, A. I.

PA 237T19

USSR/Electricity - Capacitors
Measurements

Jun 52

"Measurement of Capacitance With the Help of a Differential Circuit Using Rectifiers," Engr A. I. Fyurstenberg, Moscow

"Elektrichestvo" No 6, pp 65-67

Describes use of highly sensitive differential circuit for measuring capacitance by displacement method. Moving-coil indicating galvanometer serves as zero indicator. Error in measurement of unknown capacitance is practically equal to error of variable standard capacitance. Method is suitable for measuring capacitance at audio and radio frequencies. Submitted 25 Sep 51.

237T19

USSR/Electronics - Measurements

FYURSTENBERG, A.

"Measurement of Impedances with a Cathode-Ray Oscilloscope," A. Fyurstenberg

Radio, No 6, pp 46-49

Shows how a cathode-ray oscilloscope can be used as an indicator in the measurement of the absolute value and phase angle of impedances. These two quantities can be measured with an accuracy of ± 3-4% for impedances of up to 60 kilohms. Method can also be used to measure inductances and capacitances and to find shorted turns in choke coils and transformers.

261-T71

ORLOVSKIY, A.V., professor; LYUTER, R.A., doktor tekhnicheskikh nauk; KAZOVSKIY, Ye.Ya., kandidat tekhnicheskikh nauk; YAKOBSON, El'mar, inzhener; ANTOPOL'SKIY, V.M., inzhener; PUKHOV, G.Ye., doktor tekhnicheskikh nauk; FYURSTENBERG, A.I., inzhener; BERGER, A.Ya., professor (Leningrad); TSVERAVA, G.K., inzhener; KRAYNIY, K.I., inzhener (g.Kotovsk, Tambovskoy obl.); BELOV, V.N., inzhener (g.Ul'yanovsk).

Correspondence conference of readers of "Elektrichestvo." Elektrichestvo no.8:89-91 Ag '53. (MLRA 6:8)

1. Kiyevskiy politekhnicheskiy institut (for Orlovskiy). 2. Zavod "Elektrosila" (for Lyuter and Kazovskiy). 3. Estonkommunenergo (for Yakobson). 4. Saratovskiy industrial'nyy tekhnikum (for Antopol'skiy). 5. Tomskiy politekhnicheskiy institut imeni Kirova (for Pukhov). 6. Tikhvinskiy glinozemnyy zavod (for TSverava). (Electric engineering--Periodicals)

FURSTENBERG, A.

USSR/ Electronics - Measuring

Card : 1/1

Authors : Furstenberg, A.

Title : A Simple Method of Measuring Capacitance

Periodical : Radio, No. 4, 59 - 60, April 1954

Abstract : A method of measuring capacitance, based on a comparison between the reactive resistance of a capacitor and a known effective resistance, is described. Diagrams; table.

Institution : ....

Submitted : ....

USSR/ Electronics - Instruments

Card 1/1 Pub. 133 - 6/23

Authors : Furstenberg, A. I., Engineer

Title : Measuring frequencies by means of a quartz calibrator

Periodical : Vest. svyazi 11. 12 - 14, Nov 1954

Abstract : The method of measuring frequencies by means of quartz calibrators is described. The use of a oscillograph, with a cathode-ray tube, producing a graphic record of the varying frequencies is analyzed, and the forms of oscillograms for various cases of operating frequencies are presented. Formulas for determining frequency values by a method of comparison with a certain standard frequency (together with an auxiliary table giving the values of a coefficient "K" used in the formulas), are presented. Other frequency-measuring methods, by means of a heterodyne frequency-meter, are also discussed. Diagrams; table.

Institution: .....

Submitted: .....

FYURSTENBERG, A.I. (Moscow)

Low-voltage incandescent lamps used as a measuring instrument. Fiz. v shkole 15 no.4:66-70 Jl-Ag'55. (MLRA 8:10)
(Electric measurements)

FYURSTAMBERG, A.I.

Measurement of medium sound frequencies by means of a heterodyne and oscillograph. Izm.tekh. no.1:33-36 Ja-F '56. (MLRA 9:5)
(Frequency measurements) (Electronic measurements)

FYURSTENBERG, A.I.

Seminar on electron-beam oscillographs. Priborostroenie no.2:26 F '56. (MLRA 9:8)

(Oscillograph)

FYURSTENBERG, A. I.

AUTHOR: Fyurstenberg, A. I., Member of the Society (VNORiE) 108-12-5/10

TITLE: A Method of Measuring Sound Frequency (Metod izmereniya zvukovykh chastot).

PERIODICAL: Radiotekhnika, 1957, Vol. 12, Nr 12, pp. 67-72 (USSR)

ABSTRACT: For the measuring of low frequencies with an accuracy of some hundredths % a complicated and expensive apparatus is used. Here a less complicated and less expensive method of measuring sound frequencies with an accuracy of ± 0,05 % is described. The frequency of the order of some dozens of c and more can be measured by means of a heterodyne frequency meter, an intermediate generator, and two oscillographs. The frequency of the auxiliary generator $f_{intermediate\ generator}$ is adjusted in such a manner that the ratio between it and the measured frequency f_x is an integer:

$$N_1 = \frac{f_{intermediate\ generator}}{f_x}$$

Card 1/3 The oscillograph I serves the purpose of controlling and determining the ratio N_1. With the aid of the oscillograph II

The frequency of the heterodyne frequency meter F_1 is adjusted in such a manner that the ratio between it and the frequency of the intermediate generator is an integer:

$$N_2 = \frac{F_1}{f_{\text{intermediate generator}}}$$

For most heterodyne frequency meters the lowest frequency is 125 Kilocycles per second. In connection herewith the coefficients N_1 and N_2 in the case of a frequency measurement of the order of 100 c are within the range of from 24 to 55. Therefore the basic difficulty is the determination of the coefficients N_1 and N_2. Methods of determining them are described: 1) The method of the "Extended Sine Development Figure". 2) The method of bringing to resolution. 3) The method of epicycloids. The usefulness of the method of measuring sound frequency described here is illustrated on the basis of an example.

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A Method of Measuring Sound Frequency 108-12-9/10

There are 5 figures, 2 tables, and 6 references, 3 of which are Slavic, and 2 English.

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1. Sound frequency-Measurement

Card 3/3

8(3),24(3)

AUTHOR: Fyurstenberg, A. I. SOV/20-123-2-18/50

TITLE: The Measurement of Impedance and Frequency by Means of a Twin Phase Switch (Izmereniye polnogo soprotivleniya i chastoty pri pomoshchi sdvoyennogo fazovrashchatel'ya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 2, pp 275-277 (USSR)

ABSTRACT: The present paper describes a circuit consisting of 2 phase switches with common input, on which the parameters to be measured can practically be read off immediately. Measuring accuracy must be within the range of sound frequencies and low radiofrequencies of the orders $\pm(1 \div 2)$ % and $\pm(1 + 2)^{\circ}$. In the position marked "regulation", the sensitivity of the oscillograph in horizontal and vertical direction as well as the phase shifts caused by the amplifiers are equalized. On the screen of the oscillograph a luminous straight line is then obtained, which forms an angle of 45° with the line of the horizontal shift of the beam. The highest degree of sensitivity of the circuit with respect to a variation of the modulus of impedance is determined. At $\Delta Z = 0$ the oscillogram is rectilinear and at ΔZ it has the shape of an ellipse. Here

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Z denotes the amount of the modulus of the impedance Z_x. Equations for the large and for the small axis of the ellipse are written down. If the large axis has a length of l = 1000 m, $\Delta Z/Z = \pm 0.04$ % is obtained. When using a 5-inch oscillograph, $\Delta Z/Z \approx \pm$ (0.01 to 0.02) % is in practice obtained by means of the "fork method" ("metod vilki"). At frequencies of up to 5,000 cycles and in the case of impedance values of between 50 and 50,000 ohm a measuring accuracy of $\pm$ 1 % and $\pm$ (1.5 ÷ 2)° was attained under the usual laboratory conditions. At a frequency of 150,000 cycles and an impedance of the order of 1000 ohm, measuring accuracy was $\pm$ 2 % and $\pm$ (2 ÷ 2.5) ° respectively. If the switch was mounted with special care, measuring accuracy at a frequency of 1,000 cycles and an impedance of $\sim$ 10,000 ohm amounted to $\pm$ 0.1 %. The twin phase switch permits a comparison of frequencies with the help of epicycloids and by using amplifiers. The error due to the coupling between the two generators can be eliminated by the application of a cathode repeater with double triode (e.g. 6N3P). By means of such a switching device it is possible to compare frequencies of up to about 5 megacycles. By means of an oscillograph with

a 5-inch tube, it was possible to give a reliable interpreta - tion of oscillograms with a frequency ratio of up to 100 : 1 and 25 : 1. The advantages offered by the cycloid method compared to those of the method of brightness modulation are pointed out. There are 4 figures and 12 references, 6 of which are Soviet.

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SUBMITTED: July 9, 1958

21 (10)

AUTHOR: Fyurstenberg, A. I. SOV/53-68-2-5/7

TITLE: Comparison of Frequencies With the Methods of Sinusoidal and Elliptic Scanning (Sravneniye chastot metodami sinusoidal'noy i ellipticheskoy razvertok)

PERIODICAL: Uspekhi fizicheskikh nauk, 1959, Vol 68, Nr 2, pp 323-343 (USSR)

ABSTRACT: The cathode ray tube is an elastic and sensitive apparatus serving for the comparison of frequencies in a wide range. In a range of from 10 cycles to 30 megacycles the oscillographic method offers a number of advantages. The author of the present survey shows the characteristic features and the possibilities of this method on the basis of a great number of oscillographs. First, the method of sinusoidal scanning is dealt with in all details. The two frequencies to be compared (one known and the other to be determined) are assumed to be in a ratio of 2 : 1. Figure 1 shows the scanning figures for different phase shifts between the voltages U_x and U_y deviating from one another. Figure 2 shows 54 such figures (Lissajous figures) for the case that the

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deviations of the beam in the horizontal and vertical line be the same. Figure 3 gives the scanning figures (ratio of frequency 2 : 1) for different phase shifts in the range of from 0 to 300°, and figure 4 shows the same for a frequency ratio of 3 : 1. Further figures contain drawings relating to higher ratios of frequency (5:2, 5:2, 8:7 et al). Figure 8 contains drawings applying to the case in which one of the voltages is amplitude-modulated. Individual figures are partly discussed in detail. The unknown frequency is determined on the basis of the well-known rule which holds that the frequency ratio of the horizontal and vertical voltage is equal to the inverse ratio of the number of tangents $f_{hor}/f_{vert} = K_{vert}/K_{hor}$. Next, the moving Lissajous figures are discussed, and the mathematical theory as well as a classification are dealt with. Finally, the application of sinusoidal scanning figures with high multiplicity is dealt with and the ratios are discussed on the basis of oscillograms. The discussion also covers the measurement of acoustic frequencies by means of a heterodyne frequency meter and an

oscillograph. In the second part of the paper the author deals (less thoroughly) with the method of elliptic scanning. Elliptic scanning is obtained by the combination of two sinusoidal voltages with a phase shift of $\sim 90^{\circ}$. Figure 14 shows a simplified circuit diagram concerning this method. Figures 15 a and b depict such oscillograms, figure 16 illustrates the order of formation of elliptic scanning figures, figures 17 and 18 show 6 further forms of oscillograms (figures with a different number of lines). Table III which serves for the practical work, contains a number of data for figures with from 1 to 10 lines. Figure 19 finally, shows a scanning circuit for practical use. There are 19 figures, 3 tables, and 31 references, 13 of which are Soviet.

FYURSTENBERG, A.I.

PHASE I BOOK EXPLOITATION SOV/4397

Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti

Priborostroyeniye i izmeritel'naya tekhnika (Instrument Manufacture and Measurement Technique) Moscow, Mashgiz, 1960. 462 p. Errata slip inserted. 3,000 copies printed.

Ed.: A.N. Gavrilov, Doctor of Technical Sciences, Professor; Tech. Ed.: A. Ya. Tikhonov; Managing Ed. for Literature on Machine and Instrument Construction (Mashgiz): N.V. Pokrovskiy, Engineer.

PURPOSE: This collection of articles is intended for scientific and technical personnel in the instrument industry.

COVERAGE: The 23 articles deal with the present state and the outlook for the development of instrument manufacture and measurement technique. New problems of design, construction, and manufacture of instruments are discussed in the first two sections. Emphasis is given to problems of automation and mechanization of production and to the application of new techniques in program control, ultrasonics, and chipless working of metals. The third section deals with new measurement methods involving the use of ultrasonics and radio isotopes. Some theoretical aspects of metrology and measurement technique are also discussed in this section. No personalities are mentioned. References accompany several of the articles.

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S/115/60/000/02/021/031
D002/D003

AUTHOR: Fyurstenberg, A.I.

TITLE: An Oscillographic Combination Method of Frequency Comparison

PERIODICAL: Izmeritel'naya tekhnika, 1960, Nr 2, pp 46-48 (USSR)

ABSTRACT: The author proposes a combined method for comparing frequencies of electric oscillations, based on the sinusoidal time base (Lissajous figures) and on the method of image brightness modulation [Ref 1,2,3, English, 5, Latin, 4 Soviet]. The method (block diagram, Figure 1) is more simple and accurate than the methods on which it is based. The original idea was by R. Walter [Ref 9]. Using the oscillographic combination method, the more complicated elliptical time base method [Ref 1, 10] can be eliminated, by means of which it is impossible to attenuate sufficiently the connection between the two genera-

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An Oscillographic Combination Method of Frequency Comparison

tors without a separate buffer tube, as well as to compare frequencies at small voltages. There are 3 diagrams, and 10 references, 1 of which is Latin, 3 English, 2 German, and 4 Soviet.

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FYUR3TENBERG, A.

Oscillographic method of calibrating the scale of a low-frequency generator. Radio no.12:44-47 D '60. (MIRA 14:1)
(Oscillators, Electric) (Calibration)